

WHAT IS CLAIMED IS:

1. A welding flux for use in welding stainless steel parts, the welding flux
5 comprising a base material obtained from manganese peroxide (MnO_2), and at least
one activator selected from a material group that includes zinc oxide (ZnO), silicon
dioxide (SiO_2), chromium oxide (CrO_2), titanium dioxide (TiO_2), molybdenum dioxide
(MoO_2), and iron oxide (Fe_2O_2).
- 10 2. The welding flux as claimed in claim 1, wherein said base material is over
70wt% in the welding flux.
3. The welding flux as claimed in claim 1, wherein the total amount of said
at least one activator is below 30wt% in the welding flux.
- 15 4. The welding flux as claimed in claim 1, wherein the particle size of said
base material and said at least one activator is at least #325.
5. A method of joining two stainless steel members comprising the steps of
20 a) mixing a welding flux prepared subject to claim 1 in a liquid carrier to
form a paste-like flux;
b) applying a thin layer of said paste-like flux over the joint of the stainless
steel members; and
c) welding the stainless steel members together using an arc welding torch.

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6. The method of claim 5, wherein said liquid carrier is volatile.

7. A method of joining two stainless steel members comprising the steps of

a) using a foaming agent to make a welding flux prepared subject to claim 1
5 into a foamed flux;

d) applying a thin layer of said foamed flux over the joint of the stainless
steel members; and

e) welding the stainless steel members together using an arc welding torch.

10 8. A method of joining two stainless steel members comprising the steps of:

a) applying a welding flux prepared subject to claim 1 over the joint of the
stainless steel members by using static convergence;

b) welding the stainless steel members together using an arc welding torch.

15 9. A method of joining two stainless steel members comprising the steps of:

a) applying a thin layer of a welding flux prepared subject to claim 1 over
one side of a thin film base material;

b) adhering said thin film base material to the joint of the stainless steel
members;

20 c) welding the stainless steel members together using an arc welding torch.